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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,933	07/21/2005	Satoshi Ohuchi	2005_0931A	9171

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WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER
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KWOK, HELEN C

ART UNIT	PAPER NUMBER
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2856

MAIL DATE	DELIVERY MODE
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07/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/542,933

Applicant(s)

OHUCHI ET AL.

Examiner

Helen C. Kwok

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date July 21, 2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Objections***

2. Claims 2 and 7-9 are objected to because of the following informalities.

Appropriate correction is required:

In claim 2, line 3, the phrase "the first vibration arm" should be changed to -- the first vibrating arm -- to provide proper antecedent basis.

In claim 7, line 10, the phrase "the driving unit" should be changed to -- the drive unit -- to provide proper antecedent basis.

In claim 8, line 3, the phrase "the first vibration arm" should be changed to -- the first vibrating arm -- to provide proper antecedent basis.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, line 1, the phrase "the additional weight unit" lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/052350 (Ouchi et al) in view of U.S. Patent 6,477,897 (Mori) or JP 08-166244 (Tomikawa) or JP 2000-292172 (Hasegawa et al.) and in view of U.S. Patent 5,996,410 (Yachi et al.) and in view of U.S. Patent 4,498,025 (Takahashi) or U.S. Patent 3,697,766 (Ganter et al.) or U.S. Patent 3,683,213 (Staudte).

With regards to claims 1-2, Ouchi et al. discloses a resonator tuning fork gyroscope comprising, as illustrated in Figures 1 and 8-12, a tuning fork vibrator 1 including a first vibrating arm 2 having a first end and a second end and a fundamental vibration frequency with nodes at the first end and between the first end and the second end; a second vibrating arm 3 having a first end and a second end having the fundamental vibration frequency; a coupling portion 4 for coupling the first end of the first vibrating arm to the first end of the second vibrating arm; a drive unit 18,19,20,21 provided on the first vibrating arm having a driving resistance; a detection unit 45,46 provided on one of the first vibrating arm and the second vibrating arm. (See, Abstract).

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The only difference between the prior art and the claimed invention is a ratio  $R1/R2$  is smaller than 1 such that  $R1$  is the driving resistance at the fundamental vibration frequency and  $R2$  is the driving resistance at a vibration frequency different from the fundamental vibration frequency. The references, Mori, Tomikawa, Hasegawa et al., disclose vibrating gyroscope having a ratio  $R1/R2$  is smaller than 1 such that  $R1$  is the driving resistance at the fundamental vibration frequency and  $R2$  is the driving resistance at a vibration frequency different from the fundamental vibration frequency. (See, Figure 5, column 6, lines 13-32 of Mori; Figure 8, paragraphs [0902]-[0004] of Tomikawa; Figures 4-5, Abstract of Hasegawa et al.). It would have been obvious to a person of ordinary skills in the art at the time of invention to have readily recognize the advantages and desirability of employing a ratio  $R1/R2$  is smaller than 1 as taught by the references, Mori, Yachi et al., Hasagawa et al., to the apparatus of Ouchi et al. such that high acuteness can be obtained and heating value can be suppressed even if the vibrator is driven with large amplitude. Furthermore, to minimize driving impedance compared to other frequencies by driving the same at a resonance point is merely a well known technology in the art to an artisan.

With regards to claims 3-4, Ouchi et al. does not explicitly specify such parameter (i.e.  $0.38 < D/L < 0.46$ ) as in the claims. Yachi et al. discloses a tuning fork gyroscope comprising, as illustrated in Figures 1-32, the parameters and dimensions for the drive unit, the detection unit and the first and second vibrating arms. (See, column 1, line 65 to column 2, line 39). It would have been obvious to an artisan in the art at the time of invention to have set such test characteristic as in these claims is considered

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to have been a matter of design choice to the operator due to experimentation to derive the parameter  $0.38 < D/L < 0.46$ .

With regards to claims 5-6, Ouchi et al. does not disclose an auxiliary weight unit or additional weight unit. The references, Takahashi, Ganter et al., Staudte, disclose tuning fork comprising an auxiliary weight unit or additional weight unit positioned along the vibrating arms. (See, Figures 8-20 of Takahashi; Figures 1a,6a of Ganter et al.; Figures 1-7 of Staudte). It would have been obvious to a person of ordinary skills in the art at the time of invention to have readily recognize the advantages and desirability of employing an auxiliary weight unit or additional weight unit positioned along the vibrating arms as suggested by the references, Takahashi, Ganter et al., Staudte, to the apparatus of Ouchi et al. to adjust the frequencies of the tuning fork vibrator. Furthermore, this is a well known concept in the art to an artisan to add or delete mass on the vibrating arms to adjust a vibrational direction of the vibrator.

With regards to claims 7-9, the claims are commensurate in scope with claims 1-6 and are rejected for the same reasons as set forth above.

### ***Conclusion***

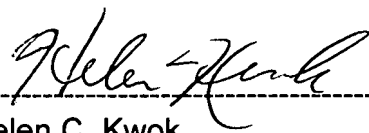
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references cited are related to angular velocity sensor having different dimensional arrangement with additional mass.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen C. Kwok whose telephone number is (571) 272-2197. The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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Helen C. Kwok  
Art Unit 2856

hck  
June 28, 2007